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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,866	02/08/2002	Shaobing Hua	25636-717	8715

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EXAMINER	
WESSENDORF, TERESA D	

ART UNIT	PAPER NUMBER
1639	

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/071,866	HUA ET AL.	
	Examiner	Art Unit	
	T. D. Wessendorf	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) *16-19 and 27-29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 20-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-26, the species, HIV (CCR5) coreceptor and beta galactosidase isacknowledged. The traversal is on the ground(s) that claims 27-29 in Group II are dependent on claim 2 or 3, which are dependent on claim 1. Nevertheless, applicants admit that claims 27-29 are distinct. But argue that these are not independent and 37 CFR 1.142 has not been met. This is not found persuasive because MPEP 608 states that the restriction can be made, if the search and examination will impose burden on the examiner, even though the invention is distinct and independent. Group II relates to a method of modifying the components after isolation of the product as compared to group I, simply isolating the product. Since the examination will impose undue examination hence, the restriction between the distinct groups was made.

The requirement is still deemed proper and is therefore made FINAL.

Claims 16-19 and 27-29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention and spices, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election).

In the amendments to the claims applicants label claims 15 and 20 as being withdrawn from consideration. However, these claims are generic to the elected species. Hence, these claims will be examined with the elected species.

Status of Claims

Claims 1-29 are pending.

Claims 16-19 and 27-29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention and species.

Claims 1-15 and 20-26 are under examination.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because:
> Non-initialed and/or non-dated alterations have been made to the oath or declaration by inventor Hua as to his citizenship. See 37 CFR 1.52(c).

Specification

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors (typographical, grammatical and idiomatic). Applicant's

cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-15 and 20-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification fails to provide an adequate description of a method to identify a scFv antibody by binding with a target peptide using undefined variables. The specification provides general statement as to the claimed method. It uses specific components to accomplish the claimed method. It does not describe in details the different libraries of VL or VH variants, the numerous variations that can be made to the VL or

VH, singly or in combination. Furthermore, there is no detail as to the numerous genes that can encode the VL or VH. It does not recite whether the different variations will be tolerated by the numerous scFv present in the library. Neither does the specification describe the numerous peptide targets that can be used for the selecting method. The specification recites in details a single receptor for very specific variants of the VL and VH in the library. It is not apparent as to how these variations can be translated or extrapolated to the different scFv antibody library. Because the claimed method cannot reliably predict expression of even any antibodies, let alone any type of proteins, one would not expect said method to apply to all kinds of VL or VH variants of the library specifically when used with the target peptide. See Cattaneo et al (TIBTECH) and Taliana. [It is suggested that applicants recite for the target receptor, HIV, CCR5 and identify the library of scFV used in the method].

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15 and 20-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claim 1 is indefinite as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the steps preceding and succeeding the single "expressing" step. Furthermore, claim 1 is unclear as the preamble recites binding of the scFv with a target peptide. The body of the claim recites selecting the expressed reporter gene with a scFV fusion to the target fusion proteins. It appears that there is no nexus between the preamble and body of the claim. [It is suggested that applicants incorporate claim 2 to claim 1].

B. Claim 2 is indefinite as to the "transcription sequence" encoding a scFv antibodies" A sequence cannot encode scFV antibodies. This rejection has similar import to claim 3 "target sequence encoding" the target peptide. Also to claims 4 and 22-24.

C. Claim 4 is ambiguous s to the negative limitation "not expressed by the library of tester expression vectors". It is not clear as to the tester expression vector being referred to. The base claim does not recite for a library of tester

expression vectors. Furthermore, the claim that e reporter gene expression under the transcriptional control of the transcription activator is at odds with the base claim. The base claim recites the reporter gene is expressed by the reconstituted transcription activator.

D. The term "rich" in claim 6 is a relative term, which renders the claim indefinite. The term "rich" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to the how rich the culture medium or components of the haploid yeasts.

E. In claims 7-8 the recitation of "the diversity of the of scFv antibodies" lack antecedent basis with the base claim.

F. Non sequitur for "the protein encoded by the reporter gene". Claim 26.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-15 and 20-26 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,406,863 ('863 Patent). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claimed method recites the same process steps as the '863 patent. The library of scFv antibodies is encompassed by the broad tester proteins of the '863 patent.

[Applicants are required to cite all the copending applications that are related to the instant invention.]

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 20 and 22-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Visintin et al (PNAS) (as evidenced by Proba et al (The Jrnl. Of Biol. Chem.).

Visintin disclose at e.g., page 11723 Materials and Methods section up to page 11725 a method of (eukaryotic) two-hybrid assay to identify a scFv antibody fragments by binding with an antigen specifically a HIV-I integrase (p. 11725). The known procedure of the two yeast hybrid is outlined in Fig. 1. If the scFv antibody fragment binds to the antigen target, a complex is formed that can bind to the HIS3 promoter (via the LexA part of the LexA-antigen fusion) and activate transcription (via the scFv is linked to the VP16 transcriptional activation domain). The b-gal production (measured by activation of beta galactosidase and blue colonies) is a consequence of antibody- antigen interaction in the transfected yeast cells. The interaction between the antigen and the scFv must occur in the cytoplasm, before the complex is translocated to the nucleus and activates transcription. Visintin at page 11725 discloses the panel (library of scfv, as claimed) derived from phage display antibody libraries. Vinsintin discloses at page 11723 as to the modification of the VL and VL sequences referring to the Proba reference. Accordingly, the Visintin process steps using specific components therein fully meet the single claimed method

step using broadly the components as claimed therein. Furthermore, the claimed step is the known yeast two-hybrid step.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-15 and 20-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Visintin in view of Zhang et al and Ueda.

Response to Arguments

Visintin is discussed above> Visintin does not disclose the diversity of the library and the use of alpha type of strains of yeast or the specific CCR5 HIV receptor. However, Zhang discloses the diversity of the libraries by referring to several references. Ueda discloses at page 123 the use of the alpha strains of the yeast. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make a diverse library of the number as claimed, in

the method of Visintin as taught by Zhang. It is considered that although Visintin does not positively recite said numbers of diverse scFv antibodies in the library, this will be inherently or obviously taught by Visintin. This is evident from Zhang reference relying on several diverse libraries. One would be motivated to use a more diverse library since this will provide a better representation of eac of the scFvs in the library. Furthermore, to select the known alpha mating strains of yeast or a specific CCR receptor of the HIV would be well within the ordinary skill in the art, as Visintin recites said HIV target receptor.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to T. D. Wessendorf whose telephone number is (571) 272-0812. The examiner can normally be reached on Flexitime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T. D. Wessendorf
Primary Examiner
Art Unit 1639

Tdw
March 8, 2004